

FIG. 1

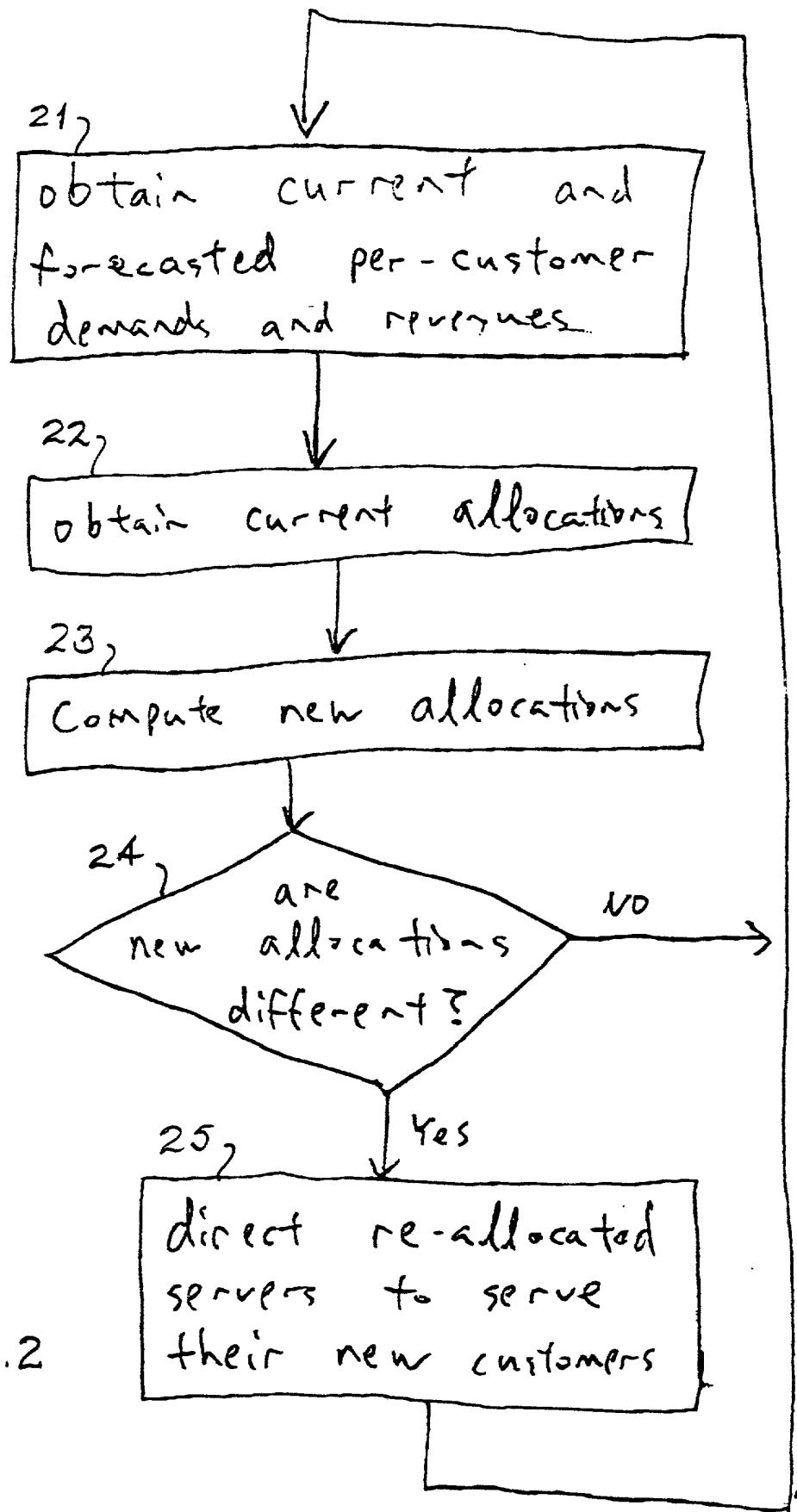


FIG. 2

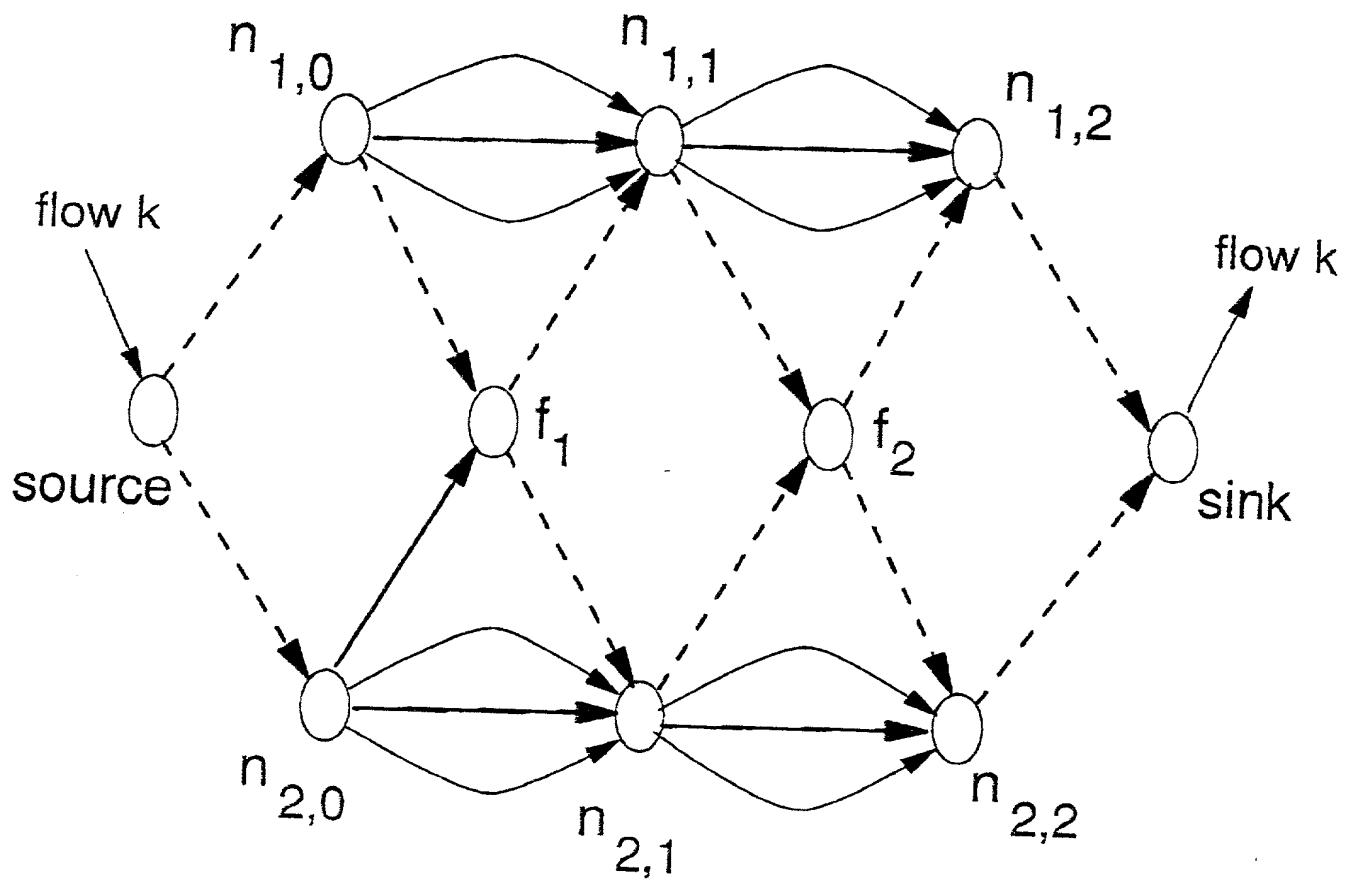


FIG. 3

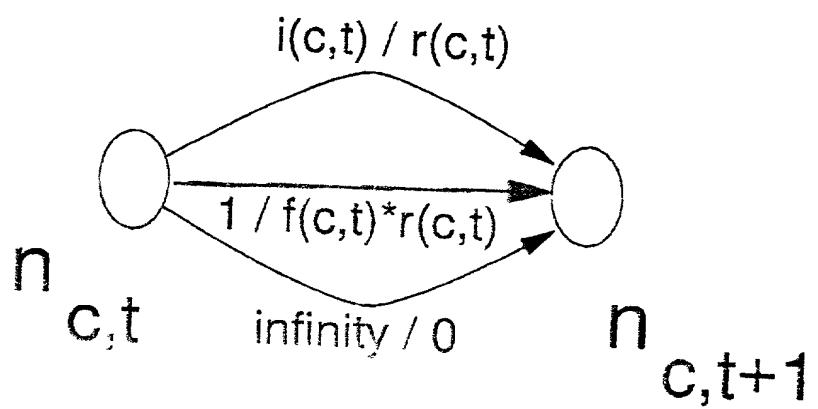


FIG. 4

501 Let  $\text{max\_time}$  denote the number of time periods.  
Construct a flow network as follows. For each customer  $c$  and time period  $t$ , construct three parallel edges  $e1(c,t)$ ,  $e2(c,t)$ , and  $e3(c,t)$  from node  $n(c,t)$  to node  $n(c,t+1)$ .  
Construct edges from  $n(c,t)$  to  $\text{free}(t)$  and from  $\text{free}(t)$  to  $n(c,t+1)$ . Construct edges from source to each  $n(c,1)$  and from each  $n(c,\text{max\_time}+1)$  to sink.

502 For each customer  $c$  and time period  $t$ , do the following:  
Let  $i(c,t)$  denote the integer part of the customer's demand for the time period, and let  $f(c,t)$  denote the fractional part.  
Set capacity( $e1(c,t)$ ) =  $i(c,t)$  and benefit( $e1(c,t)$ ) =  $r(c,t)$ .  
Set capacity( $e2(c,t)$ ) = 1 and benefit( $e2(c,t)$ ) =  $f(c,t) \cdot r(c,t)$ .  
Set capacity( $e3(c,t)$ ) = infinity and benefit( $e3(c,t)$ ) = 0.

503 For each time period  $t$ , do the following:  
Set capacities of all edges to and from  $\text{free}(t)$  to infinity.  
Set benefits of all edges to and from  $\text{free}(t)$  to 0.

504 Set capacities of all edges to sink and from source equal to infinity. Set benefits of all such edges to 0.

505 Find a maximum benefit maximumflow of volume equal to the number of servers from source to sink in the constructed network using existing art.

506 Set the allocations of servers to customers equal to the flows present on edges among a customer's nodes in the corresponding time periods. Similarly derive transitions between allocations from the flows present on the edges to and from the free pool nodes.

FIG.5